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FROM: William M. Lee, Jr.

TO: Examiner: Curtis Odom
Art Unit: 2634
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Attached: Response To Office Action Of January 14, 2004

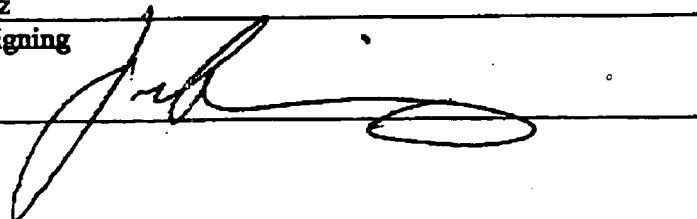
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920569-905295

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE THE APPLICATION OF

Nidham Ben Rached et al.

SERIAL NO.: 09/402,955

FILED: February 14, 2000

FOR: Space-Weighted Communication Path
Estimation)
)
) Examiner: Curtis Odom
)
) Group Art Unit: 2634
)
) Customer Number: 23644
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SignatureRESPONSE TO OFFICE ACTION OF JANUARY 14, 2004Honorable Director of Patents and Trademarks
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Dear Sir:

This response is being filed in view of the further office action of January 14, 2004. No amendments are being proposed as none are believed appropriate, as will be seen when considering the following remarks.

The applicants are pleased to see that the examiner is no longer applying Bahai U.S. Patent Number 6,097,770. However, now the examiner has rejected claims 1 and 2 under 35 U.S.C. §102(e) as allegedly being anticipated by Jarvela U.S. Patent Number 5,917,851. Reconsideration is requested since, it is submitted, the examiner has misinterpreted the teaching of Jarvela.

Jarvela discloses a Rake receiver and a method for allocating the branches of the Rake when using polarization diversity (col. 1, l. 6 0-9). A signal is thus received at the Rake receiver at different polarization levels. The allocation method proposed by Jarvela aims at selecting the Rake branches, for the reception of the signal, e.g. a strength and a signal noise ratio. Thus, only

the branches receiving a signal with a given polarization level having good characteristics is allocated, thereby improving the quality of reception of the signal.

Jarvela also specifies that a typical embodiment of the invention is to allocate a number of branches to one traffic channel, the branches being divisible between diversity branches (col. 2, l. 17 - 20).

For this purpose, Jarvela teaches to receive known components of a signal having different polarization levels (col. 3, l. 22 - 27) and to form a correlation with the received signal and a spreading code (col. 3, l. 27 - 29 and col. 4, l. 3 - 5). Such correlation is performed to detect the reception of the sent signal at different delays. It has nothing to do with the space statistic of a communication path as claimed in claim 1 of the present application. Indeed, the space statistic of a communication path of the present application refers to a set of data reflecting the behavior of the path including at least two different communication channels over a predetermined period in respect with an existing degree of correlation of the signals received at the antennas (see page 8, lines 18 - 36 of the present application).

Then, after having detected the reception of the signal having a given polarization level, Jarvela discloses that an impulse response of the signal is formed (col. 3, 55 - 59). Such impulse response of the signal (as illustrated in Fig. 1) is indicative of the strength of the received signal. It must not be confused with an impulse response of a channel as claimed in claim 1 of the present application, which represents the fluctuations affecting a transmitted signal on said channel (see page 1, lines 10 - 29 of the present application).

Finally, Jarvela discloses that the impulse response of the received signal is weighted for instance by a pre-estimated signal interference ratio (col. 4, l. 29 - 34). Once all weighted impulse responses of the signals having different polarizations have been obtained, some corresponding branches are selected accordingly.

It is thus clear that the teaching of Jarvela is very different from the present invention in which a corrected impulse response of a plurality of channels associated with a plurality of antennas is established by weighting a first estimate of the impulse response of the channels by

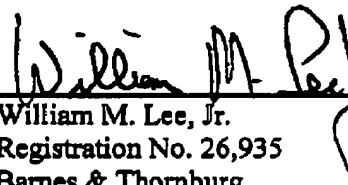
means of a space statistic of a communication path formed of the plurality of channels and an estimate of the additive noise of the channels.

Such method permits to take into account the fact that the various antennas are spatially linked while estimating the communication path, i.e. while estimating the fluctuations existing on all the channels forming said communication path.

It will therefore be seen, upon reconsideration, that Jarvela does not anticipate or render obvious the subject matter of claim 1, since Jarvela clearly does not apply thereto. It is therefore submitted that claim 1, and claim 2, which depends from claim 1, are allowable over Jarvela. While the indicated allowability of claims 3 through 14 is gratefully acknowledged, given the above, it is submitted that all claims are in condition for allowance, and such further and favorable reconsideration by the examiner is urged.

April 14, 2004

Respectfully submitted,



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